REMARKS / ARGUMENTS

I. General Remarks and Disposition of the Claims

Please consider the application in view of the foregoing amendments and the following remarks. Applicants thank the Examiner for his careful consideration of this application, including the references that Applicants have submitted in this case and, pursuant to MANUAL OF PATENT EXAMINING PROCEDURE § 609.02, all references submitted in the patent applications to which this application claims priority under 35 U.S.C. § 120. Applicants respectfully request that the above amendments be entered and further request reconsideration in light of the amendments and remarks contained herein.

At the time of the Office Action, claims 1, 3-8, 10-19, 21-25, 27-28, 30, 32-36, 39-42, 44, 56, 59-62, 65-73, 82-83, 85-90, 92-95, 97-100, and 103-111 were pending. Claims 1, 3-8, 10-19, 21-25, 27-28, 30, 32-36, 39-42, 44, 56, 59-62, 65-73, 82-83, 85-90, 92-95, 97-100, and 103-111 were rejected in the Office Action. Claim 97 has been cancelled herein.

In this Response, claims 95 and 98 have been amended. These amendments are supported by the specification as filed. All the amendments are made in a good faith effort to advance the prosecution on the merits of this case. It should not be assumed that the amendments made herein were made for reasons related to patentability.

II. Remarks Regarding Rejections Under 35 U.S.C. § 102

A. Rejections Under 35 U.S.C. § 102(e) Over *Lee*

Claims 82 and 83 stand rejected under 35 U.S.C. 102(e) as being anticipated by USPN 7,348,365 B2 to Lee ("*Lee*") for the reasons discussed in item 9 of the prior office action dated August 11, 2008. (Office Action at 2). With respect to the former rejections of claims 56, 62, 65, 66, 67, 69, and 70, the Office Action has withdrawn the rejections of those claims over *Lee* "due to Lee not disclosing the PVP to be crosslinked." (*Id.*) In response to Applicants' prior remarks regarding the outstanding rejections over *Lee*, the Office Action further states:

> Applicant's arguments in Response regarding composition claims 82 and 83 limiting the composition to "a drilling fluid" are found not persuasive. This is a future intended use of the claimed composition. A recitation of an intended future use of the claimed fluid composition must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art

> composition is capable of performing the intended use, then it meets the claim.
>
> Applicant's argument that Lee does not disclose a scale inhibitor is incorrect. PVP can inhibit scale formation by reducing shale swelling (as discussed above in the prior art rejections).
>
> Thus, the claims, as amended, remain anticipated by Lee.

(*Id.* at 8-9.) Applicants respectfully disagree with these rejections because *Lee* does not disclose each and every limitation of claims 82 and 83 as required to anticipate these claims under 35 U.S.C. § 102(b). *See* MANUAL OF PATENT EXAMINING PROCEDURE ("MPEP") § 2131 (2009).

Specifically, *Lee* does not disclose a polyvinyl pyrrolidone nanoparticle source comprising ***crosslinked*** polyvinyl pyrrolidone, as recited in independent claim 82 (and incorporated in dependent claim 83). Indeed, the Examiner has withdrawn prior rejections of claims 56, 62, 65, 66, 67, 69, and 70 over *Lee* "due to Lee not disclosing the PVP to be crosslinked." Thus, for at least this reason, Applicants respectfully submit that the rejections of claims 82 and 83 over *Lee* cannot be maintained, and thus respectfully request their withdrawal.

B. Rejections Under 35 U.S.C. § 102(e) Over *Ryde*

Claims 56, 62, 65-73, 82, 83, 95, and 100-111 stand rejected under 35 U.S.C. 102(b) as being anticipated by USPN 7,276,249 B2 to Ryde *et al.* ("*Ryde*") for the reasons discussed in item 9 of the prior office action dated August 11, 2008. (Office Action at 2). Applicants note that the prior office action indicates that this rejection is under 35 U.S.C. § 102(b). However, the publication date of *Ryde* is after the filing date of the present application, and thus *Ryde* can only be available under § 102(e). In response to Applicants' prior remarks regarding these rejections, the Office Action states:

> Applicant's arguments in Response regarding Ryde not disclosing the composition used in a drilling operation are not persuasive. As was the case discussed above regarding Lee, this is a future intended use of the claimed composition. If the prior art composition is capable of performing the intended use, then it meets the claim.
>
> Applicant's arguments that Ryde does not disclose the particulate formulation to be less than about 1000 nanometers are incorrect. Applicant's attention is respectfully addressed to the exemplary nanoparticulate tablet formulations in the tables in column 20 and 21, all of which contain crospovidone (crosslinked PVP); and to formulation 6 in Table 4 on col. 27, disclosing the

> size of a particle formulation containing PVP to be 750 nm. These tablet formulations can be dispersed in an aqueous solution for parenteral injection applications and can further include, e.g., sodium chloride (weighting agent). (Page 23, line 55 to col. 24, line 11)

Thus, the claims, as amended, remain anticipated by Ryde.

(*Id.* at 9). Applicants respectfully disagree with these rejections. Applicants respectfully submit that the cited reference does not disclose each and every limitation of claims 56, 62, 65-73, 82, 83, 95, and 100-111, as presented herein, as required to anticipate these claims under 35 U.S.C. § 102(b). *See* MPEP § 2131.

With respect to claim 56 (and its dependent claims), *Ryde* fails to disclose a fluid that comprises a ***bridging agent***. As Applicants have previously noted, although *Ryde* does mention salts included in the compositions disclosed therein, there is no indication that these salts have the requisite properties (*e.g.*, particle size) to satisfy the requirements of a bridging agent as understood by a person of ordinary skill in the art. *Ryde* discloses solutions used in pharmaceutical applications, which are entirely unrelated to subterranean operations. There is no disclosure, suggestion, or reason presented in *Ryde* or anywhere else in the pertinent art to include a bridging agent in the compositions disclosed in *Ryde*, which are completely unrelated to the drilling fluids claimed in Applicants' claim 56. Indeed, since the fluids disclosed in *Ryde* are not introduced into subterranean formations, there is no logical reason to include a bridging agent in those fluids. Nor does the Office Action point to any component of *Ryde* that satisfies this element of claim 56. The present Office Action makes no response to Applicants' remarks in their prior response regarding *Ryde*'s failure to disclose a bridging agent, and thus Applicants respectfully submit that these rejections should be withdrawn.

With respect to claim 82 (and its dependent claims), *Ryde* fails to disclose a fluid that comprises a ***scale inhibitor*** as recited in claim 82, as amended. Indeed, as noted above, *Ryde* discloses solutions used in applications that are entirely unrelated to subterranean operations. There is no disclosure, suggestion, or reason presented in *Ryde* or anywhere else in the pertinent art to include a scale inhibitor in the fluids disclosed in *Ryde*, which are completely unrelated to the drilling fluids claimed in Applicants' claim 82. Nor does the Office Action point to any component of *Ryde* that satisfies this element of claim 82. The Office Action makes no response to Applicants'

remarks in their prior response regarding *Ryde*'s failure to disclose a scale inhibitor, and thus Applicants respectfully submit that these rejections should be withdrawn.

Finally, with respect to claim 95 (and its dependent claims), claim 95 has been amended in this response to recite that the drilling fluid further comprises rubber latex nanoparticles, as recited in former claim 97, which was not previously rejected over *Ryde*. Thus, Applicants respectfully submit that the rejections of claim 95 and its dependent claims over *Ryde* are now moot.

Therefore, for at least the reasons discussed above, independent claims 56, 82, and 95 are not anticipated by *Ryde*. Moreover, since "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers," and since claims 62, 65-73, 83, and 100-111 depend, either directly or indirectly, from independent claim 56, 82, or 95, these dependent claims are allowable for at least the same reasons. *See* 35 U.S.C. § 112 ¶ 4 (2004). Accordingly, Applicants respectfully request the withdrawal of these rejections.

III. Remarks Regarding Rejections Under 35 U.S.C. § 103(a)

A. Rejections Over *Heilweil '412* in view of *Carpenter* or *Willberg*

Claims 1, 3, 7, 8, 10-19, 24, 25, 27, 28, 30, 32, 36, 39-42, 56, 62, 65-73, 82, 83, 86, 90, 92-95, 100, and 103-111 stand rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 4,792,412 to Heilweil ("*Heilweil '412*") in view of U.S. Patent No. 3,252,904 to Carpenter ("*Carpenter*") or U.S. Patent Application Publication No. 2004/0106525 by Willberg *et al.* ("*Willberg*"). With respect to these rejections, the Office Action states:

> Heilweil '412 discloses an aqueous brine fluid, for use in subterranean formation applications, such as drilling and completion operations, that contains a high salt concentration and a polyvinylpyrrolidone polymer (PVP) or copolymer, wherein PVP (shale inhibitor) can act to increase the viscosity of the fluid at elevated temperatures, and wherein the salt/brine can be calcium bromide or calcium chloride (flocculant and weighting agent) or sodium bromide. (Abstract; col. 1, lines 21-36; col. 2, lines 18-54; col. 5, lines 53-60; col. 7, lines 40-53) The salt can be present in 30-60% by weight, whereas preferred PVP has a molecular weight of at least 10,000 in an effective amount in solution of 0.5% to 10% by weight. (Col. 2, lines 43-69; col. 4, lines 59-67; col. 7, lines 27-40; Examples 1 and 2; Table 3)
>
> Heilweil '412 further discloses the aqueous drilling fluid further containing surfactants and fluid control solids/agents, such as clay (also weighting agent). (Col. 7, lines 53-61; claim 11) In col. 2, lines 23-28; and in claims 7; 11; and 12, Heiweil'412

expressly discloses using the drilling fluid in a well bore operation. The suspended salt in the saturated brine and/or the fluid loss control solid/agent can serve as a "bridging agent". (See. e.g., col. 5, lines 13-35)

However Heilweil '412 does not expressly disclose PVP to be crosslinked and having a particle size of less than 1000 nanometers.

On the other hand, as previously discussed in item 11 of OA, Carpenter teaches adding crosslinked PVP to a fluid composition for use in subterranean formation applications, such as acidizing or hydraulic fracturing, wherein the fluid composition can comprise a chloride salt brine and a particle size of less than about 20 to 60 mesh. (Col. 1, lines 9-20; col. 1, line 51 to col. 2, line 3; col. 2, lines 13-45; col. 3, lines 8-57; col. 7, lines 31-60; Table IV; Drawing) The cited drawing in Carpenter depicts variation of rates of swelling inhibition with respect to particle size. (Col. 5, lines 35-68; col. 7, line 68 to col. 8, line 18)

Carpenter further teaches that the rate of swelling activity (fluid-loss control rheology) of the crosslinked PVP particles in brine/water can be adjusted by particle size to attain a preferred rate of fluid loss control in the subterranean formation application. (Col. 8, lines 26-61)

Similarly, Willberg teaches that particle sizes of individual components of a fluid treatment composition may be the same or different. Particularly, in regards as to particle sizes of a fluid loss additive or filter cake former components (product of a drilling operation), particle size depends primarily upon the pore size distribution of the rock onto which the filter cake is to be deposited and whether or not it is intended to eliminate or just to reduce fluid loss. Criteria for, and methods of, choosing the optimal particle sizes or particle size distributions for conventional fluid loss additives and filter cake components are well known. Other particle sizes or size distributions may be selected as a compromise between those that are optimal for fluid loss control or filter cake formation and those that are optimal for self-destruction at the desired time and rate. The rate of self-destruction can readily be measured in the laboratory in a given fluid at a given temperature. (Willberg, page 3, [0018])

Therefore, it would have been obvious to a person of ordinary skill in the art at the time that the claimed invention was made to choose crosslinked PVP (of a preferred/optimal particle size) for the PVP component of the aqueous drilling brine composition in Heilweil '412's method of drilling a well bore. It would have been obvious to one skilled in the art to choose a

> preferred/optimal particle size (such as less than about 1000 nm) of crosslinked PVP in the aqueous drilling fluid composition to be able to manipulate the degree of fluid-loss control and attain a resultant method of drilling that is more efficient as taught by Carpenter or Willberg.
>
> Thus the instant clams are unpatentable over Heilweil '412 and either Carpenter or Willberg.

(Office Action at 6-8.) Applicants respectfully disagree with these rejections.

In order to form a basis for a § 103(a) rejection, a combination of prior art references must teach or suggest each element in the claim, or there must be some teaching, suggestion, or other rationale for why a person of skill in the art would modify the prior art teachings to include any missing elements with a reasonable expectation of success. *See* MPEP §§ 2142 & 2143. However, there is no teaching, suggestion, or logical rationale for combining the teachings of *Heilweil '412* and *Carpenter* or *Willberg* in the manner described in the Office Action to arrive at the claimed invention. Specifically, the cited combination does not make obvious the inclusion of a polyvinyl pyrrolidone nanoparticle source that comprises nanoparticles of polyvinyl pyrrolidone having an average particle size of less than about 1,000 nanometers in the drilling fluids described in *Heilweil '412*.

The Office Action acknowledges that *Heilweil '412* does not disclose the particle size of the PVP component described therein, but instead asserts that (1) *Carpenter* "teaches that the rate of swelling activity (fluid loss control rheology) of the crosslinked PVP particles in brine/water can be adjusted by particle size to attain a preferred rate of fluid loss control in the subterranean formation application," and (2) *Willberg* "teaches that particle sizes of individual components may be the same or different [and] choosing the optimal particle sizes ... for conventional fluid loss additives and filter cake components are well known." (Office Action at 5.) For this reason, the Office Action asserts that a person of skill in the art would be motivated to adjust the particle size of the PVP component in a drilling fluid "to manipulate the degree of fluid-loss control and attain a resultant method of drilling that is more efficient as taught by Carpenter or Willberg." (*Id.* at 6.) Applicants respectfully disagree with these assertions, as discussed for each combination of references below.

1. Combination of *Heilweil '412* and *Carpenter*

First, *Carpenter* does not teach that the particle size of the PVP component of *Heilweil '412* could be modified to control fluid loss. First, in order for the determination of the preferred or optimal particle size to be characterized as obvious, that parameter must first be recognized as a result-effective variable, *i.e.*, a variable which achieves a recognized result. MPEP § 2144.05. However, *Carpenter* does not teach that the particle size of the PVP component of *Heilweil '412* is a "result effective variable" whose modification can control fluid loss. The very portion of *Carpenter* cited by the Examiner notes that the particle size of the swellable polymers therein only affects fluid loss by "delaying the action of acids upon earth formations in comparison to ordinary aqueous acid solutions" in fluids used to acidize a subterranean formation, thereby delaying the formation of cracks in the formation through which fluid may be lost. (*Carpenter* at col. 7, lines 31-34.) In the fluid loss tests to which the Final Office Action cites, *Carpenter* specifically notes "the manner by which the polymers function to ***retard the dissolution of earth formations by acid***," thereby reducing fluid loss. (*Id.* at col. 9, ll. 59-61.) In contrast, the fluids in *Heilweil '412* do not comprise acids at all, and fluid loss is controlled in *Heilweil '412* via viscosification of the drilling fluid. (*Heilweil '412* at col. 2, ll. 40-52.) *Carpenter* does not suggest that alteration of particle size would have any effect on fluid viscosification, much less how it could be a "result-effective variable" in *Heilweil '412*.

Moreover, even if *Carpenter* did teach alteration of PVP particle size pertinent to *Heilweil '412*, it certainly does not suggest that the particle size of a PVP component may be reduced to the magnitude of nanoparticles, much less to than about 1,000 nanometers (as recited in claims 1, 19, 30, 41, 56, 82, 86, and 95) or less than about 400 nanometers (as recited in claims 10, 27, 39, 65, 92, and 103). As Applicants have already noted, the smallest particle sizes disclosed in *Carpenter* are 40-60 mesh (*Carpenter* at col. 8, l. 5) or 251,000 - 422,000 nanometers—orders of magnitude larger than any nanoparticle or the size ranges recited in Applicants' claims. Thus, *Carpenter* can supply no expectation that the use of nanoparticle PVP would be successful in the applications disclosed in *Heilweil '412*.

Finally, if *Carpenter* suggests any relationship between fluid loss control and the particle size of the PVP additive -- and Applicants maintain that it does not -- any such relationship suggested in *Carpenter* actually teaches ***away*** from the use of nanoparticles. The Office Action states that "[t]he cited drawing in Carpenter depicts variation of rates of swelling inhibition with

respect to particle size." The drawing in *Carpenter* depicts the rate at which acid is "spent" (*i.e.*, the rate at which acid interacts with acid soluble portions of a subterranean formation creating cracks or voids through which fluid may be lost) for fluids comprising PVP polymers of various particle sizes (curves A through F having particles of increasing sizes). However, the data in this figure suggests that ***smaller*** particles of PVP (*e.g.*, curve A) ***increase*** the rate at which acid is spent (*i.e.*, an increased rate at which a portion of a subterranean formation would be dissolved), which would result in an ***increased*** rate of fluid loss. Thus, if *Carpenter* contains any suggestion about the use of nanoparticles (it does not), it indicates that such smaller, nanoscale particle sizes would increase fluid loss rather than control it to attain a "more efficient" drilling method, as the Final Office Action suggests. Accordingly, *Carpenter* cannot render the use of a nanoparticle source obvious. MPEP § 2145 (combination or modification of prior art cannot be obvious where reference teaches away from their combination or modification; proceeding contrary to prior art is evidence of nonobviousness).

2. Combination of *Heilweil '412* and *Willberg*

Similarly, Applicants respectfully disagree that *Willberg* teaches that the particle size of the PVP component of *Heilweil '412* could be modified to control fluid loss. *Willberg* discloses compositions used to form filter cakes that prevent fluid loss. (*See Willberg*, entire document.) With respect to the particle sizes of components of those compositions, *Willberg* contains the following teaching:

> The particle sizes of the individual components of the mixture may be the same or different. The particle sizes of the individual components of the mixture or of the combined mixture, ***as they relate to the use as a fluid loss additive and as filter cake former components,*** depend primarily upon the pore size distribution of the rock onto which the filter cake is to be deposited and whether or not it is intended to eliminate or just to reduce fluid loss. Criteria for, and methods of, choosing the optimal particle sizes or particle size distributions ***for conventional fluid loss additives and filter cake components*** are well known. Other particle sizes may be chosen for embodiments of the current Invention; particle sizes or size distributions may be selected as a compromise between those that are optimal for fluid loss control or filter cake formation and those that are optimal for self-destruction at the desired time and rate.

(*Id.* at ¶ 0018 (emphases added).) Thus, *Willberg*'s teaching of particle size of various components is specifically limited to the use of those components ***in forming a filter cake***. This does not suggest that the particle size of the PVP component of *Heilweil '412* (which is never stated as forming a filter cake) is a "result effective variable" whose modification can optimize fluid loss. Neither the PVP component nor any other additive in the fluids in *Heilweil '412* is used to form a filter cake; instead, fluid loss is controlled in *Heilweil '412* via viscosification of the drilling fluid. (*Heilweil '412* at col. 2, ll. 40-52.) *Willberg's* teaching that the particle sizes of filter cake-creating agents may be varied to optimize fluid loss does not suggest that alteration of PVP particle size in *Heilweil '412* would have any effect on fluid viscosification, much less that it could be a "result-effective variable" to optimize fluid loss.

Moreover, even if *Willberg* did teach alteration of PVP particle size pertinent to *Heilweil '412*, it certainly does not suggest that the particle size of a PVP component may be reduced to the magnitude of nanoparticles, much less to than about 1,000 nanometers (as recited in claims 1, 19, 30, 41, 56, 82, 86, and 95) or less than about 400 nanometers (as recited in claims 10, 27, 39, 65, 92, and 103). *Willberg* fails to disclose any particular particle size at all, or any of the allegedly "well known" methods of ascertaining the appropriate particle size for components of a treatment fluid, much less does it teach particles of a nanoscale, as Applicants have claimed. Indeed, *Willberg* teaches that "[t]he particle sizes of the individual components ... as they relate to the use as a fluid loss additive and as filter cake components, depend primarily upon the pore size distribution of the rock onto which the filter cake is to be deposited." (*Willberg* at ¶ 0018.) However, nanoparticles generally would not be sufficiently large to bridge pore throats on a rock face to form a filter cake in most subterranean formations, but instead would simply flow through the pore throats, failing to prevent fluid loss. This use of nanoparticles would thus render the methods and compositions of *Willberg* unsuitable for their intended uses of creating a filter cake and preventing fluid loss, and thus *Willberg* cannot possibly teach or suggest the use of nanoparticles. Nor can it be obvious to modify *Willberg* to use such nanoparticles. *See* MPEP § 2143.01 (proposed modification of prior art in an obviousness rejection cannot render the prior art unsatisfactory for its intended purpose).

Thus, for the reasons discussed above, Applicants respectfully submit that the combination of *Heilweil '412* with *Carpenter* or *Willberg* does not make obvious the inclusion of a polyvinyl pyrrolidone nanoparticle source that comprises nanoparticles of polyvinyl pyrrolidone

having an average particle size of less than about 1,000 nanometers in the drilling fluids described in Stowe, as recited in independent claims 1, 19, 30, 41, 56, 82, 86, and 95. Therefore, for at least the reasons discussed above, independent claims 1, 19, 30, 41, 56, 82, 86, and 95 are not obvious over *Heilweil '412* in view of *Carpenter* or *Willberg*. Moreover, since "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers," and since claims 3, 7, 8, 10-18, 24, 25, 27, 28, 32, 36, 39-40, 42, 62, 65-73, 83, 90, 92-94, 100, and 103-111 depend, either directly or indirectly, from independent claim 1, 19, 30, 41, 56, 82, 86, or 95, these dependent claims are allowable for at least the same reasons. *See* 35 U.S.C. § 112 ¶ 4 (2004). Accordingly, Applicants respectfully request the withdrawal of these rejections.

B. Rejections Over *Heilweil '412* in View of *Carpenter* or *Willberg* and *Stowe*.

Claims 4-6, 14, 21-23, 33-35, 40, 56, 59-62, 65-73, 85, 87-89, 93, 97-99, 107 and 110 stand rejected under 35 U.S.C. 103(a) as being unpatentable over *Heilweil '412* in view of Carpenter or Willberg, and further in view of U.S. Patent Application Publication No. 2002/0160919 to Stowe, II *et al.* ("*Stowe*"). With respect to these rejections, the Office Action states:

> Heilweil '412, Carpenter and Willberg were discussed above in the instant action. These references do not disclose the aqueous brine composition further containing a latex polymer.
>
> However, as discussed previously in item 11 of GA, Stowe teaches a waterbased drilling fluid composition containing a polymeric latex capable of providing a deformable latex film or seal on at least a portion of a subterranean formation, wherein the polymeric latex provides reduction of the rate of drilling fluid pressure in the borehole wall of the subterranean formation during drilling and enhanced flocculation properties; wherein the essential components of the water-based drilling fluids are the polymer latex and water. (Abstract; Page 2, [0022] and [0023]; Table 1) The polymer latex is preferably a carboxylated styrene/butadiene copolymer and the average particle size of the polymer latex can be less than 1 micron (1000 nanometers), preferably having a diameter of about 0.2 microns (200 nm) or less. (Page 2, [0024]) The proportion of the polymer latex in the drilling mud can range from about 0.1 to about 10 vol. %. (Page 2, [0024]) This latex provides enhanced flocculation properties to the fluid (Table 1). The fluid can further contain salt; a precipitating agent; and surfactant, whereas the water can be fresh water. (Page 2, [0025] to [0028]) Other additives can be added to help balance the fluid properties. (Page 2, [0023])

> Stowe further teaches that the addition of the latex to the brine fluid addresses a particular problem that arises when drilling into shale formations with a water-based fluid as to the pore pressuring increase and swelling from penetration of the shale by the fluid. The addition of the deformable latex to the drilling fluid composition can serve to bridge a crack opening to seal a fracture and establish differential pressure across the latex thereby consolidating the formation and providing wellbore stability. (Page 1, [0005] to [0012]; page 2, [0012]; page 6, [0075] to page 7, [0080])
>
> Accordingly, it would have been obvious to a person of ordinary skill in the art at the time that the invention was made to add a deformable polymeric latex to the aqueous drilling fluid composition used in Heilweil '412 and Carpenter/Willberg's method of drilling a well bore. It would have been obvious to one skilled in the art to do so to attain a more efficient method of drilling due to the latex reducing shale swelling and thereby providing wellbore stability as taught by Stowe.
>
> Thus the instant clams are unpatentable over Heilweil '412, Stowe and either Carpenter or Willberg.

(Office Action at 6-7.) Applicants respectfully disagree with these rejections.

In order to form a basis for a § 103(a) rejection, a combination of prior art references must teach or suggest each element in the claim, or there must be some teaching, suggestion, or other rationale for why a person of skill in the art would modify the prior art teachings to include any missing elements with a reasonable expectation of success. *See* MPEP §§ 2142 & 2143. However, there is no teaching, suggestion, or logical rationale for combining the teachings of *Heilweil '412* with *Carpenter* or *Willberg* and *Stowe* in the manner described in the Office Action to arrive at the claimed invention.

Specifically, the cited combination does not make obvious the inclusion of a polyvinyl pyrrolidone nanoparticle source that comprises nanoparticles of polyvinyl pyrrolidone having an average particle size of less than about 1,000 nanometers, as recited in each of Applicants' independent claims. As discussed in Section III.A., none of *Heilweil '412*, *Carpenter*, or *Willberg*, either alone or in combination, suggest this element.

Applicants note that the Office Action does not state that *Stowe* provides any motivation to alter the particle size of PVP to a nanoparticle scale, as Applicants' claims require. Indeed, there is no reason that a person of ordinary skill could expect that *Heilweil '412's* PVP

polymers could be successfully modified to comprise nanoparticle PVP simply because *Stowe* discusses the use of a completely different additive (latex) on a nanoparticle scale. Such a combination would employ impermissible hindsight that cannot form the basis for an obviousness rejection. *See* MPEP § 2142 ("impermissible hindsight must be avoided and the legal conclusion [of obviousness] must be reached on the basis of the facts gleaned from the prior art").

Thus, for the reasons discussed above, Applicants respectfully submit that the combination of *Heilweil '412* with *Carpenter* or *Willberg* and *Stowe* does not make obvious the inclusion of a polyvinyl pyrrolidone nanoparticle source that comprises nanoparticles of polyvinyl pyrrolidone having an average particle size of less than about 1,000 nanometers in the drilling fluids described in Stowe, as recited in independent claims 1, 19, 30, 41, 56, 82, 86, and 95. Therefore, for at least the reasons discussed above, independent claims 1, 19, 30, 41, 56, 82, 86, and 95 are not obvious over *Stowe* in view of *Freifeld* and *Carpenter*. Moreover, since "a claim in dependent form shall be construed to incorporate by reference all the limitations of the claim to which it refers," and since claims 4-6, 14, 21-23, 33-35, 40, 59-62, 65-73, 85, 87-89, 93, 97-99, 107 and 110 depend, either directly or indirectly, from independent claim 1, 19, 30, 41, 56, 82, 86, or 95, these dependent claims are allowable for at least the same reasons. *See* 35 U.S.C. § 112 ¶ 4 (2004). Accordingly, Applicants respectfully request the withdrawal of these rejections.

IV. No Waiver

All of Applicants' arguments and amendments are without prejudice or disclaimer. Additionally, Applicants have merely discussed example distinctions from the cited references. Other distinctions may exist, and Applicants reserve the right to discuss these additional distinctions in a later Response or on Appeal, if appropriate. By not responding to additional statements made by the Examiner, Applicants do not acquiesce to the Examiner's additional statements, such as, for example, any statements relating to what would be obvious to a person of ordinary skill in the art.

SUMMARY AND PETITION FOR A ONE-MONTH EXTENSION OF TIME TO FILE THIS RESPONSE

In light of the above amendments and remarks, Applicants respectfully request reconsideration and withdrawal of the outstanding rejections. Applicants further submit that the application is now in condition for allowance, and earnestly solicit timely notice of the same. Should the Examiner have any questions, comments or suggestions in furtherance of the

prosecution of this application, the Examiner is invited to contact the attorney of record by telephone, facsimile, or electronic mail.

Applicants hereby petition for a one-month extension of time to file this response under 37 C.F.R. § 1.136(a)(1), extending the period for reply from August 11, 2009 to September 11, 2009.

The Commissioner is hereby authorized to debit Baker Botts L.L.P.'s Deposit Account No. 02-0383, Order Number 063718.0358, in the amount of $130.00 for the fee under 37 C.F.R. § 1.17(a)(1) for the one-month extension of time to file this Response. Applicants believe that no additional fees are due in association with the filing of this response. Should the Commissioner deem that any fees are due, including any fees for extensions of time, Applicants respectfully request that the Commissioner accept this as a Petition Therefor, and direct that any additional fees be charged to Baker Botts, L.L.P.'s Deposit Account No. 02-0383, Order Number 063718.0358.

Respectfully submitted,

Elizabeth L. Durham
Registration No. 59,509
BAKER BOTTS L.L.P.
One Shell Plaza
910 Louisiana
Houston, TX 77002
Telephone: 713.229.2104
Facsimile: 713.229.7704
Email: liz.durham@bakerbotts.com

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